

## Hydrologic Model Manager

<b>Short Name</b>	ARNO Model
<b>Long Name</b>	
<b>Description</b>	
<b>Model Type</b>	Continuous time, semi-distributed rainfall-runoff model
<b>Model Objectives</b>	To develop a model for water master planning, analysis of extreme floods, real-time flood forecasting, and represent the soil component in general circular models.
<b>Agency Office</b>	Department of Earth and Geo-Environmental Sciences, University of Bologna, Bologna, Italy.
<b>Tech Contact</b>	Professor E. Todini
<b>Model Structure</b>	The model is a suite of modules representing most of the processes which are described at the catchment or sub-catchment scale. The processes include soil moisture balance, drainage, percolation, groundwater, evapotranspiration, snow accumulation and melting, parabolic overland runoff routing, and parabolic in-stream routing.
<b>Interception</b>	
<b>Groundwater</b>	
<b>Snowmelt</b>	
<b>Precipitation</b>	
<b>Evapo-transpiration</b>	
<b>Infiltration</b>	
<b>Model Paramters</b>	11, 6 of which relate to soil moisture that need calibration; the remaining parameters can be estimated from geomorphologic and soil and land use maps.
<b>Spatial Scale</b>	Catchment or sub-catchment scale
<b>Temporal Scale</b>	Continuous time
<b>Input Requirements</b>	Hydrometeorological data, rainfall, soils maps, drainage maps, and land use maps.
<b>Computer Requirements</b>	PC with windows
<b>Model Output</b>	Discharge hydrographs
<b>Parameter Estimatr Model Calibrtn</b>	Some parameters are estimated by model calibration using an optimization routine.
<b>Model Testing Verification</b>	The model has been extensively tested on Italian basins as well as on basins outside of Italy.
<b>Model Sensitivity</b>	Not given.
<b>Model Reliability</b>	Not given, but the model accuracy is reported to be within 20 to 30 % accuracy.
<b>Model Application</b>	Tiber River in Italy, Arno River in Italy, and others.
<b>Documentation</b>	Not available in public domain but it can be obtained from Professor E. Todini.
<b>Other Comments</b>	The model is simple and has potential for practical applications at the catchmet scale.

References:  
Todini, E., 1996. The ARNO rainfall-runoff model. Journal of Hydrology, Vol. 175, pp. 339-382

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Developer	
Technical Contact	
Contact Organization	